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MORPHINISM.

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The deleterious effects of opium and its by-products upon the human constitution has for many years been recognized, but it has been only in the last decade that governments have taken cognizance of the widespread effects and use of this insidious drug, and have taken powerful steps to eradicate, or at least, to moderate its production and sale. To the cursory observer, or even to the student, or further even to the general practitioner, this baneful disease of morphinism does not seem to be of greater import nor does it seem to play any great part in the affairs or welfare of nations, but to one who has done a small amount of investigation along this line, it is shown that the disease produced by opium and its products has played a prominent role in the destinies of men, and has threatened not only the welfare of states, but even the very life of one of the world's most populous nations.

The use as well as the abuse of opium was begun in China, where at first the milky juice extracted from the poppy was held in great esteem by the mandarins and by the higher classes. It was found by them that it produced a feeling of great exhilaration with a gradual merging into a sleep filled with most wonderful dreams, and its rest-giving, and oblivion-producing powers became so well known that the high officials considered the drug as one of their most valuable possessions. To visitors, legatees and emissaries and other foreign officials, the drug was given as a token of high respect. It was served by pipe, much as tea is served at afternoon functions of the present day. For any courtesy, appreciation was shown by the offering of an amount of opium. It is in this way that the opium became introduced into other countries where it has become firmly entrenched.

The use of the crude drug gradually spread in China and in time was in use among the lower classes as well as the higher. Its use became almost universal and reached such alarming proportions, that with the modern enlightenment and awakening of China, the better educated classes saw that a stupendous curse was im-

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pending even threatening destruction to the nation. Accordingly in 1906 the government declared that the trade in opium must stop.

In the United States the trade was gradually introduced until at the present time it is estimated that there are over one million drug fiends in his country. Considering that the population of the United States is ninety million, it is seen that one person in every ninety whom we meet is addicted to the use of opium in some of its forms. For the last decade the government has endeavored to control the trade, but in spite of the almost prohibitive duty imposed upon opium and the strict observance of its sale, the number of addicts has decreased to no considerable extent. The duty is becoming higher, the sale restriction more severe, and the product more difficult to obtain.

When it is known that the drug is becoming less accessible, that the state is vigilantly watching its dispensation, and the government is drawing its dragnet upon its importation; and when it is known that morphine addicts must have the drug (else they suffer unknown torments, commit crimes to obtain it, or even end their lives for want of the opiate) it is obvious that a great problem as to the present care of these unfortunates, as well as to the future production of morphine fiends, is presented to those who have the welfare of humanity and the commonwealth at heart, and it is a problem which confronts every medical practitioner, for in his hands often lies the power to produce or not to produce an addict to this loathsome habit.

Opium is the concrete, milky exudation obtained by incising the unripe capsules of *Papaver Somniferum*, yielding in its normal moist condition not less than 9 per cent of crystalline morphine, which is the principle narcotic constituent. The crude drug is the agent used principally by the Chinese people who smoke it in pipes especially constructed for the purpose.

Codeine, a methyl derivative of morphine, is found in small quantities in the crude drug. Its action is milder than that of morphine. It is used principally by the laity as a toothache remedy.

Heroin, diacetyl morphine, is an insoluble derivative of the opium. It finds its principal use in bronchial and pulmonary affections, and has for this virtue found its way into many of the official and proprietary cough preparations.

Besides these derivatives there are about twenty-four other preparations and alkaloids denoted as extracts, wines, tinctures, powders, troches, plasters and mixtures. With such a number it is easily seen how their use may creep in upon an unknowing pub-

lic, producing addictions which are difficult and almost impossible to break away from.

But the drug that works the greatest depredations and which constitutes 75 per cent of the use of opium and all its derivations is morphine sulphate. This pure white crystalline substance is the alkaloid which is the most abused of all drugs. As an allayer of pain it is king, but as a destroyer of men, mentally, morally and physically, it is as the traitor, pretending to be friendly, but at the same time slowly dragging its victim to death. The morphine sulphate is usually employed in a syringe and injected subcutaneously, although it is frequently taken by mouth. It is used largely by denizens of the underworld who seek relief from life's trials and troubles in its soothing embrace.

The causes of morphinism are many. Foremost perhaps, it is brought about by efforts to combat the distress and ravages of pain. Physicians of the last decade have been too eager to allay pain merely by slight injection of morphine, and, in fact many have not hesitated putting the preparation in the hands of their patients, with the result that people with primarily a minor ailment have been unwittingly put under the defiling influence of this drug.

Secondly, there are diseases which require opium derivatives not only for the allaying of pain, but for relief from the condition. Asthma may lay claim to morphine as one of its cures. Bronchitis and pulmonary affections demand heroin, while peritonitis and derangements of pelvic organs require a certain amount. Chronic and incurable diseases as cancer, aneurism and some kidney diseases are tided over for a while and rendered more tolerable by the suffering victim.

Besides pain and disease, there is a nervous strain of modern life, or the "Mania Americana," which is temporarily relieved by the soothing effects of opium, but which is subsequently made worse by the continued use. Physicians are prone to its use. They are in daily contact with the drug, and although they realize the firm grasp with which it takes them, many endeavor to fling aside their troubles and cares or to stimulate themselves to further efforts by partaking of this hemlock cup. Society women who have undergone a trying season of parties and social functions, ever endeavoring to outrival their neighbor in social splendor, often find themselves wrecked in mind and body. Too often they indulge in opium to calm their shattered nerves. As with the higher classes, so with the lower. Prisons and penitentiaries are filled with fiends, many of whom were produced after they had entered the dismal walls. Almost every brothel has its victims. And even the dweller of the

gutter and slum is not exempt. Conditions of life are such, their pains and tribulations are so great that the miserable victim seeks periods of relief and contentment in the use of this death-dealing substance.

The symptoms of morphine poisoning are best classified as acute and chronic, and dealt with as they are produced on the mind or mental; and on the body or physical symptoms. The acute attack is usually brought on in one of three ways; smoking the crude drug itself; obtaining accidentally an overdose, and in children by the administering of an overdose of proprietary soothing syrup, or in adults by the use of laudanum, codeine and heroin to gain relief from pain; and lastly receiving injections of morphine hypodermically in diseases demanding the drug. To the opium smoker after a few draughts at his pipe comes most wonderful visions, marvelous pageants, fairy-like phantasmagorias and miraculous events. These dreams gradually fade into a deep sleep. Physically a lack of irritability is produced; the smoker is unable to be aroused and does not respond to means of torture or excitation.

The infant, suffering from flatus in the intestines is given soothing syrup and soon ceases to scream, and likewise falls into a deep sleep, leaving entirely masked any symptoms which would aid in detecting the primary cause of its trouble.

The adult who receives an injection of morphine is soon relieved of his pain, even feeling a soothing or comforting sensation after its administration. He usually is at first stimulated with a feeling of warmth and of well being. This merges into a stage of physical and mental depression in which the senses and reflexes are dulled. Sleep usually follows. At first there may be a perspiration and a dryness of the mouth. A contracted so-called "pin point" pupil is produced. After the sleep there is a feeling of ennui accompanied by a nausea often followed by vomiting. There is a diminished output of urine and a costiveness of the bowels.

The chronic morphine addict presents a complex of mental and physical symptoms.

After a prolonged use of the drug he becomes pale and sallow, having a waxy appearance of his skin. In most cases the addict loses in weight and strength, although when under the influence of the drug he believes himself able to cope with an army. He becomes impotent shortly after he has become an inveterate user and is entirely unable to consummate the sexual act. This is also noted in the females, who have a suppression of the menses and frequently abort.

At times there are stages of chills followed by pyrexias presenting a most miserable picture. A cold sweat profusely covers the body.

The bowels are usually constipated, although at times there may be some diarrhoea. The constipation is an important factor in that it produces hemorrhoids about the anus. These may be complicated by never healing, frightfully painful fissures, which call for more morphine for their relief.

The eyes present a "pin point" pupil when the patient is well under the influence. This is an important diagnostic sign. After the primary myosis the pupils become large and dilated.

When out from under the effects of the morphine the chronic addict is a pitiful sight. He is restless, uneasy, staring into space, trembling in every limb, and eyes downcast. He may lose entire control of himself. One addict aptly describes the sensation as, "feeling as though every atom of his body were becoming loosened and endeavoring to fly off into space." It is at such times, in utter desperation, that many crimes are committed. But as soon as the required dose is supplied, the patient brightens up and presents the demeanor of a most alert and ambitious person, ready for any task. Many complain of a gnawing sensation in the stomach which drives them on to taking the morphine for its relief. Jennen, of Paris, has considered this as being due to an achlor-hydria for which he recommends a small amount of diluted hydrochloric acid.

One of the most astonishing mental symptoms of the addict is his utter disregard for the truth. He will prevaricate to friend and foe alike, seeming to delight in telling that which is most untrue and improbable. Besides this, he develops in his mind most astonishing tales of scandal and trickery, often involving his immediate associates.

He becomes slovenly in his manner and loses much of his self-respect. He usually shrinks from contact with his friends, but at other times may be most loquacious.

The average dose for an adult is gr. $\frac{1}{4}$. To the beginner this produces the required symptoms but each subsequent time a larger dose is required up to certain limits. Chronic addicts are known to have taken a dram hypodermically without producing death. This dose is sufficient to kill one hundred and twenty non-addicts.

The treatment has for many years been not entirely satisfactory, although throughout this country and the continent many sanatoriums for its cure have been established.

The treatment of gradual withdrawal has proven entirely

unsatisfactory, occurrences of the habit being almost universally the end result.

Suggestion and hypnosis have their places in the treatment, but alone they are without avail.

Hyoscine, of the atropine group seems to be a direct antagonist to morphine, and treatments with this drug are of the most benefit. It is the treatment as outlined by Dr. Petty, who recently published a book on the work which meets with entire success. This book is along definite lines which are as follows: Elimination, deprivation under hyoscine, stimulation, recuperation and education. The entire treatment requires from six to eight weeks.

When the patient presents himself for treatment he is given a thorough physical examination, the history of his former illness taken, and a statement of the manner in which he began the use of the drug. It is the desire to have the patient's good will and his desire to free himself from the addiction.

For the first week he is allowed his usual amount of morphine, but undergoes a thorough cleaning out, or system of elimination of the toxins by means of cathartics, diuretics, steam baths, sweats and massages. Every day he is given vegetables and saline cathartics, such as C. C. pills and magnesium sulphate, plenty of water, caffeine to produce diuresis, and a course of baths to eliminate by the emunctories. Along with this he is given strychnine, gr. 1/30, to stimulate the entire system and to give tone for peristaltic action to the intestines which have for so long been locked up by the action of the morphine. Plenty of good, plain, substantial food is also given to build up the constitution and prepare it for the subsequent treatment.

After the period of elimination or at the beginning of the second week, hyoscine hydrobromide (usually gr. 1/200) is commenced and given every half hour until the physiological effect is produced. This may cause a deep sleep, or a great unrestfulness if insufficient quantities of the hyoscine are given. The administration is of course variable, some patients becoming quiet and restful under small doses, while others require larger. The ideal result is to have the patient free from restlessness and presenting a drowsiness just bordering on sleep. The mouth is dry, emitting an offensive and characteristic odor, the pupils are widely dilated, the skin is dry and the restlessness, if present, is intense. The patient writhes in the bed, often necessitating strong restraints, he mutters incoherently, clutches at the bed clothes, and has grotesque hallucinations.

It is planned to give the first dose of hyoscine about three hours before the patient usually takes the dose of morphine so he will be entirely under the influence of the hyoscine at the time.

After the patient is first well under, he is given just enough of the hyoscine to keep him from being restless but not continuously asleep, and kept in this condition for forty-eight hours under the strict surveillance of a competent nurse who should never leave his bedside even for a short time. Strychnine, gr. 1/60-1/30, is given every four hours to keep up the heart action, and tone the alimentary canal. Plenty of water is offered during the treatment but very little is taken on account of the disagreeable taste in the mouth. Hot milk also may be given but no solid food is allowed.

In case there is vomiting during the treatment, an enema is given and the bowels thoroughly cleaned out in this way.

At the end of the second day the hyoscine is discontinued and the patient commences to recuperate. All desire for the drug is gone and the patient realizes that he is out of bondage. This rejuvenates him, although in many cases he is left with an acute neurasthenia and a run down, debilitated constitution as a result of the sudden change from living under the influence of the drug to living entirely out of its grasp. As a rule the patient commences to feel better within a day or two although some linger on for several days or a week. They may feel weak and depressed as though they were recovering from a severe surgical shock. They are intensely nervous, and at times flighty, doing most extraordinary things. They suffer from insomnia and a desire to do something they know not what.

The treatment to follow is symptomatic, but principally to stimulate with strychnine, tonics and an abundance of good food. For the insomnia, chloral and bromides, or veronal may be given, but not continuously. Plenty of company is desired and all is done to keep the patient in a bright, upbuilding, encouraging state of mind. He improves gradually and within six or eight weeks after the discontinuance of the morphine he is entirely well.

Recurrences to the use of the drug seldom occur, although such is easily done should the patient by accident ever receive morphine again. To this end it should be every physician's precaution to ask whether a patient has ever been an addict, before he prescribes opium in any of its forms.

At the California State Prison, at San Quentin, over thirty addicts have been completely cured during the past year and a half. All of those treated have gained much in weight and general health and are high in their praise of the treatment.

Prison treatment has an advantage over other treatments in that the patient is unable to leave the doctor's care when he wishes, and the drug cannot be smuggled in.

There is a disadvantage, however, in the fact that as soon as the prisoner is released from prison, he has no other associates than those of the underworld with whom he has come in contact, and consequently he has a good opportunity to return to his vice. The addict of course, knows about the drug, and knows how it will temporarily allay him, and unless he has developed a resolute will-power, he may have a relapse during some trying ordeal.

Fortunately, most of the cured morphinists released from this prison have been placed in good hands away from their former companions, with the result that many of them have remained cured.